

Post-quantum trails: an educational board game about migration to post-quantum cryptography

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Motivation

- Migration to post-quantum cryptography is important topic
- Many developers, IT teams, and decision-makers do not (fully) understand what PQC is or why it matters
- Raising awareness is one of important steps of successful migration process

Board game

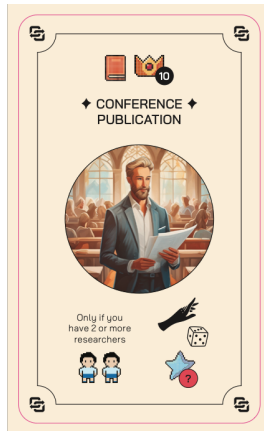
- Gamification is a powerful tool for training and knowledge transfer, making complex topics more accessible and memorable
- Models the real-life struggles of transitioning to PQC
- The game shows the cost of delay or missing some important steps
- Adoption of new technology is not just about maths – it is about people, processes, and culture

What is the game about?

- Each of the players represents lead of research group that develops cryptographic algorithm and helps with migration process
- *Goal:* make sure your algorithm is widely adopted
- *Challenges:* bad events happen each turn and distract from the smooth workflow

Player's turn

- Resolve event
- Play cards
- Collect resources (science, money, influence)
- Publish papers or hire new team members
- Move on the migration track



Sharing the game with the world

- Developer conference (students and professionals), HistoCrypt, Student fairs
- Many players have not heard about cryptography and the need in PQC before
- Sessions with game master are more engaging and educational



Thank you!

- Shall we play?



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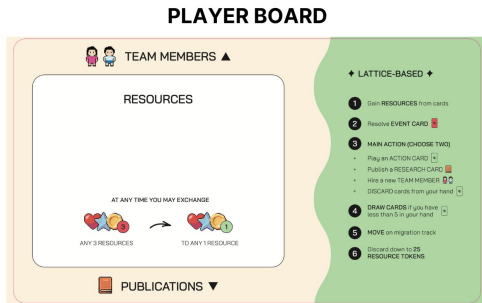
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Rules

Each player selects a player board and places it in front of them, takes a meeple of the corresponding colour and places it near the migration board



MEEPLE



Rules

Each player draws five action cards

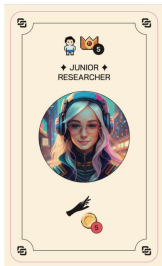
ACTION CARDS



Rules

Each player gets five coins and a junior researcher card and places them next to their player board

JUNIOR RESEARCHER



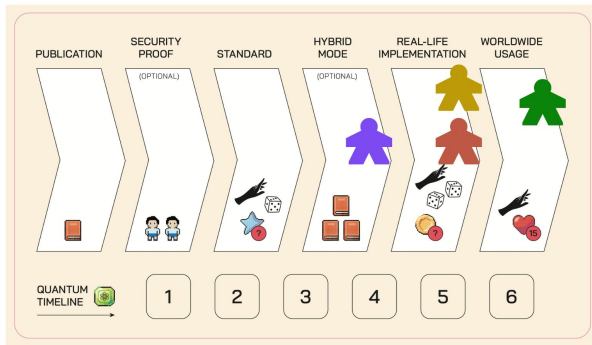
STARTING COINS



Goal of the game

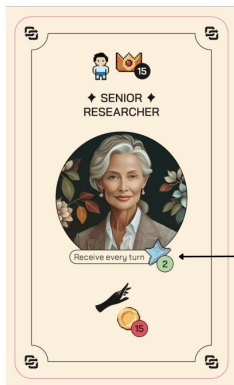
Be first to move on the last step of migration track

MIGRATION TRACK



Turn order (1)

Gain resources from team members/publications

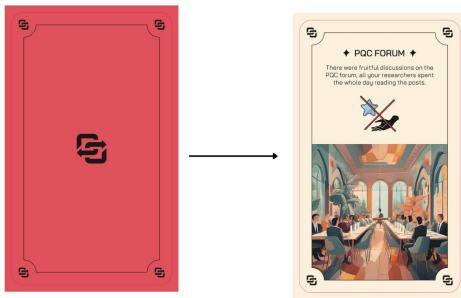


RECEIVE RESOURCES

Turn order (2)

Draw and resolve event card

**YOU CANNOT GAIN SCIENCE
TOKENS THIS TURN**



Turn order (3)

Perform two main actions from the list:

- Play an action card
- Hire new team member
- Publish paper
- Discard any of the cards on hand

Main action

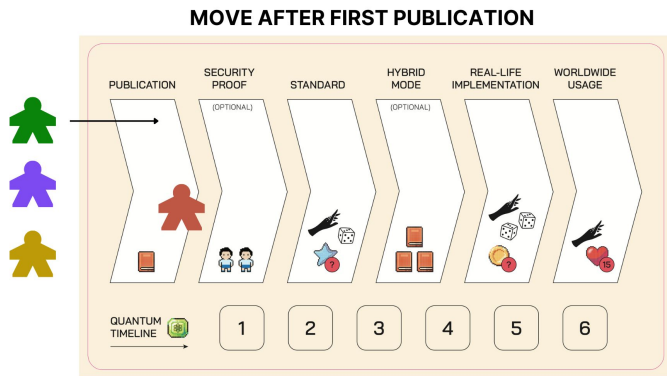


Turn order (4)

Draw cards if you have less than five cards in your hand

Turn order (5)

Move one step on migration track (if possible)



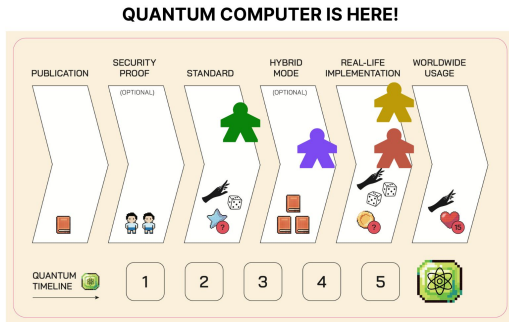
Turn order (6)

Discard down to 25 resource tokens (total)

Game end

The game ends if one of the following events is triggered:

- Quantum track reaches the final space
- One of the players reached worldwide usage stage in the migration path



Count points!

